

the mule-deer in the same district was afforded by the number of bleached antlers which marked the line of the great spring migration, when the wapiti were returning to the mountains from their winter feeding-grounds on the plains. At the present day, these noble deer are unknown on the low-grounds of the Bighorn basin, and the few survivors have to make shift as best they can during the dreary winter months in the mountains, from among the pine forests of which they emerge as seldom as possible.

Mr. Selous was fortunate enough to obtain some very fine heads of wapiti, white-tailed deer and mule-deer, one head of the latter being a remarkably good specimen, and notable on account of the relatively narrow span of the antlers. To one expression which the author is very fond of using—to wit, a “bull” wapiti—we are fain to take exception, the term “stag” being the proper one to employ in this connection. And here we may venture to point out to the author, in connection with a statement on page 166, that naturalists of the present day (whatever may have been the practice with their predecessors) are not in the habit of translating generic terms into English, and that, consequently, there is no objection to the application of the name *Antilocapra* to the American prongbuck, on the ground that it indicates an animal midway between an antelope and a goat. Such names should be regarded as mere abstract terms without any definite meaning. And, while we are fault-finding, it may be mentioned that there are a few little slips in nomenclature which might advantageously have been avoided. The rough-legged buzzard, for instance, is not an *Aquila* (p. 140), while *Speotyto*, and not *Speotitis* (p. 145), is the proper title for the little American ground-owls. It may be added that it would have been a decided improvement to the book if, instead of making the title the heading of every page, the chapter-headings had been employed for the right-hand pages.

A reviewer is always expected to pick some holes in a book, but it may be candidly stated that the foregoing are all the faults we have to find with the one before us. To those who contemplate a trip to either of the districts visited by Mr. Selous, as well as to those stay-at-home people who prefer to hear of stirring adventures by field and flood when comfortably seated by their own firesides, rather than undergo the inseparable hardships and toils themselves, we can confidently recommend “*Sport and Travel*” as an attractive and interesting volume, written by one who is at the same time a keen sportsman and an intelligent and thoughtful observer.

R. L.

THE COMPARATIVE HISTOLOGY OF VERTEBRATES.

Lehrbuch der vergleichenden mikroskopischen Anatomie der Wirbeltiere. Herausgegeben von Dr. Med. Albert Oppel—Dritter Teil. Pp. x. + 1180. (Jena: Gustav Fischer, 1900.)

PROF. OPPEL has set himself the colossal task of furnishing a succinct account of the comparative histology of vertebrates, and the volume before us is the third instalment towards the attainment of that end. The two former parts, which appeared in 1896 and 1897, dealt respectively with the comparative structure of the stomach and of the gullet and intestines. The present is concerned

with the remainder of the alimentary canal, viz., the mouth, including the tongue and salivary glands (but exclusive of the teeth, which are referred to a later publication in which the skeleton will be dealt with) and the large glands whose ducts open into the commencement of the intestine, viz., the pancreas and liver. The extent of the undertaking will be manifest when we mention that the account of these subjects requires nearly 1200 large octavo pages, with 679 illustrations in the text and ten coloured lithographic plates, and that there is a bibliographical list comprising several hundred books and papers, each one of which is referred to in the text, and all of which are given with their full title and references; so that the possession of this alone would render the book of inestimable value to any one working at any part of the subject with which it deals.

As we have pointed out in noticing the parts of Prof. Oppel's work which have already appeared, the author has not attempted to verify all the statements and descriptions which he gives; such verification would indeed be an impossible task when we consider the enormous amount of material which has accumulated upon the subject, even within recent years. Nevertheless, there are several points in the present volume upon which Prof. Oppel has made personal observations, and although these are not published in this book for the first time, their appearance tends to give an air of originality to a work which, in the main, must necessarily be a compilation, however critically the matter which it contains is dealt with; but it will be easily understood that where, as in a work of this character, conciseness must be a main object there cannot be much room for criticism.

A feature of the work is the chronological order in which the results of investigation upon each subject dealt with are put before the reader, an arrangement which gives a special interest of a historical character to many of the descriptions. This is well exemplified in the chapters dealing with the relation between the structure of glands and their condition of activity, in which, as in many other parts of the book, the author contrives to introduce points of high physiological interest into a work the chief aim of which is no doubt morphological. Where all is excellent it is not easy to particularise; but certain parts are especially dealt with in a masterly manner, as, for example, the structure and relations of the tonsils and similar lymphatic tissues in the mouth and pharynx, the papillæ of the tongue and the distribution of taste buds upon them, the structure of the lingual and salivary glands and pancreas in mammals, including the changes which they undergo during secretion, their secretory capillaries, their nerves and nerve-endings. The account of the pancreas embraces, not only a minute description of the glandular substance proper and of the changes which its cells undergo in different physiological conditions, but also a careful description of the intertubular islands which were first described by Langerhans, and which have recently attracted attention on account of the possibility, which has been expressed by more than one writer, that the influence which that gland exerts upon the carbohydrate metabolism of the body (its entire removal is always followed by severe diabetes) may be dependent upon an internal secretion produced by the cells in question.

The part which is devoted to the liver opens with a comparison of the structure of that with other glands, and is followed by a historical account of the discovery of the bile canaliculi, which furnishes an excellent example of the value of applying the methods of physiology to the elucidation of structure. The treatment of the liver cell alone occupies some forty pages, although this is a subject which, in most text-books of histology, is considered to be sufficiently dealt with in as many lines. Another important part of this section, not merely from a morphological but also from a pathological point of view, is that devoted to the connective tissue of the lobules, which was originally shown by von Fleischl (working with Ludwig) to be so abundant; a fact which has been confirmed and extended by several observers employing modern histological methods. Like its predecessors, this volume is a storehouse of information upon the subjects of which it treats, and must remain for many years an indispensable work of reference, not only to the comparative anatomist and histologist, but also to the physiologist.

E. A. S.

OUR BOOK SHELF.

Flies Injurious to Stock. By Eleanor A. Ormerod, LL.D. Pp. 80. (London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd., 1900.)

MISS ELEANOR A. ORMEROD continues her useful work of popularising the information which has been acquired concerning the life-histories of injurious insects by issuing, in a form accessible to all, an account of the principal dipterous pests which infest stock.

The book does not pretend to be a contribution to science, for Miss Ormerod's own important observations on the "Warble-fly" have been several times previously published, and the rest of the work is mainly compiled from various authors whose papers are duly referred to in footnotes.

The Hippoboscidae are represented by the "forest-fly" and the so-called "sheep-tick," but most of the book is devoted to an account of the Tabanidae or "gad-flies" and the Eristidae or "bot-flies," and the writer tries to make clear the differences in structure and habits between the members of these two families. Much general ignorance exists with regard to the common biting flies, and the brief account of them here given will, we imagine, be particularly welcome. Considering the frequency of their occurrence, remarkably little is known of the early history of some of these insects, but Miss Ormerod is surely in error in stating that that of *Haematopota* is unknown, for the larva has been described and figured by Perris.

The Eristidae, economically the most important family, naturally come in for the fullest treatment. Errors which have crept into the usual accounts of the "sheep's nostril fly" are corrected. Larvæ, not eggs, are laid in the sheep's nostril, but though they work up into the nasal passages, they never, as is often stated, reach the brain.

A second horse bot-fly which occurs in this country, *Gastrophilus haemorrhoidalis*, might have been mentioned, especially as it is more easy of detection and more susceptible of treatment than the common species.

The otherwise excellent account of the "warble-fly" is marred by the incorporation of a large amount of correspondence, the gist of which might have been compressed into a few lines. However appropriate the inclusion of these letters in Miss Ormerod's original papers on the subject, they seem out of place in a *résumé* such as that before us.

LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

The Value of Magnetic Observatories.

IN answer to those who consider that the magnetic results obtained at Kew Observatory are of little or no practical value, I would offer the following remarks for their consideration. The railway engine driver may run his 70 miles an hour on rails, certain as to being on the right road, and in like manner the electric tram car driver may keep in the right direction.

The sailor, however, on the trackless ocean, has only his compass to guide him, at best directed by that unstable magnet the earth. But the earth by induction transforms his iron or steel ship into a still less stable magnet, which not only disturbs the compass on board but permanently reduces the value of the earth's directive force on that compass by '1 or '2 of that observed on land.

Fortunately, as the knowledge of terrestrial magnetism increased, men of science were gradually enabled to solve the at one time knotty problem of a ship's magnetism, and the seaman can now run his vessel over twenty knots an hour in safety on a dark night. Without a knowledge of terrestrial magnetism, the now universal iron or steel ship would have been almost an impossibility, and the faster ships go the more necessary does that knowledge become, to wit in the navigation of the St. Lawrence and English Channel. The sailor is continually asking for charts of the magnetic declination to be brought up to date; Kew and other magnetic observatories help largely in this direction.

Moreover, a theory of terrestrial magnetism is much wanted which (letting alone other possibilities) would enable us to provide accurate charts of the magnetic elements years in advance, in the same manner that the "Nautical Almanac" is prepared. Hence the importance of Kew as a valuable link in the chain of magnetic observatories, which has already been reduced by the destruction caused by electric tramways.

Blackheath, S.E.

ETTRICK W. CREAK.

Huxley's Ancestry.

WITH reference to Lord Avebury's reminiscences of Huxley, and the summary of his views concerning British races, it may be of interest to quote Huxley's account of his own racial characters, as contained in a private letter written ten years ago: "My father was a Warwickshire man; my mother came of Wiltshire people. Except for being somewhat taller than the average of the type, she was a typical example of the 'Iberian' variety—dark, thin, rapid in all her ways, and with the most piercing black eyes I have ever seen in anybody's head. Mentally and physically (except in the matter of the beautiful eyes) I am a piece of my mother, and except for my stature, which used to be 5 feet 10, I should do very well for a "black Celt"—supposed to be the worst variety of that type. My father was fresh-coloured and grey-eyed, though dark-haired, good-humoured, though of a quick temper, a kindly man, rather too easy-going for this wicked world. There is a vein of him in me, but the constituents have never mixed properly. . . . I know of Huxleys in Staffordshire, Worcestershire and Wales, and I incline to think that the Huxleys of Huxley [Cheshire] are responsible for most of us, and that, upon the whole, we are mainly Iberian mongrels, with a good dash of Norman and a little Saxon." This was written for my private information, as bearing on certain inquiries into "genius" and race, but there can be no objection to its publication now.

HAVERLOCK ELLIS.

Quartz-Calcite Symmetrical Doublet.

AT the Bradford meeting of the British Association, Section A, I offered to lend this lens for purposes of research to any investigator who would satisfy me as to his qualification for taking the necessary care of it. I am now ready to do so.

Oaklands, Chard, November 26.

J. W. GIFFORD.